## REMARKS

Claims 1 and 2 have been examined. Claims 3 and 4 have been withdrawn from consideration.

Claims 1 and 2 stand rejected under 35 U.S.C. §112, second paragraph, for indefiniteness. Claim 2 is objected to for a typographical error.

Claim 1 has been amended to clarify the language thereof. The invention includes a porous carrier body that is formed from at least one oxide of magnesia, alumina, zirconia, titania or calcia. A complex oxide is formed on the surface of the carrier body by reacting at least one catalytic-activity constituent with at least one carrier-forming constituent. The catalytic-activity constituent is selected from the group consisting of Ni and Co. The carrier-forming constituent is a compound of Mg, Al, Zr, Ti and/or Ca. This reaction occurs during calcining of the porous carrier body with simultaneous impregnation with the catalytic-activity constituent and the carrier-forming constituent. The hydrocarbon reforming catalyst further includes catalytic-activity particles that are produced from the complex oxide by an activating process. The catalytic-activity particles are distributed on the surface of the porous body wherein 80% or more of the catalytic-activity particles are sized 3.5 nm or less.

Claim 1 has been amended to more clearly recite these features of the present invention. Support therefor appears at least at page 9 and throughout the specification. No new matter has been added. The typographical error in claim 2 is corrected. Withdrawal of the indefiniteness rejection and the objection are respectfully requested.

Claims 1 and 2 stand rejected under 35 U.S.C. §102(a) for anticipation by U.S. Patent No. 6,423,665 to Okada. Applicants respectfully traverse this rejection for the following reasons.

The reforming catalyst of the present invention includes (1) a complex oxide that is formed on the surface of the porous carrier body and (2) catalytic-activity particles produced from the complex oxide. The complex oxide originates from co-precipitates deposited on the surface of the porous carrier body by reaction of a catalytic-activity constituent with a carrier-forming constituent. The catalytic-activity particles that are

produced from the complex oxide are uniformly distributed on the surface of the porous carrier body, including its inner surface. As such, the catalytic-activity particles are particularly suited for reforming reactions. The surface of the porous carrier body includes its inner surface which is used as a base for supporting the catalytic-activity particles.

This process, which results in the claimed hydrocarbon-reforming catalyst, is referred to as an "impregnation co-precipitation process". The combination of impregnation with co-precipitation has advantages detailed at page 5, lines 17-23, page 6, lines 1-15, page 10, line 26 to page 11, line 9 and is reported in the examples. In particular, most of the catalytic activity particles produced from the complex oxide of the present invention are very fine. At least 80% of the catalytic-activity particles are sized 3.5 nm or less. As a result, the catalyst of the claimed catalyst exhibits extremely high activity without accumulating carbonaceous materials. These features are not found in the catalyst disclosed in the Okada patent, nor are they achievable thereby as detailed below.

The reforming catalyst disclosed in the Okada patent is a complex metal oxide expressed by the formula $M_aCo_bMg_cCa_dO_e$. This complex formula is prepared by the following steps:

(1) co-precipitation of M,Co,Mg and Co from a nitric solution or the like;

(2) filtration of the precipitates;

(3) washing and drying of the filtered co-precipitates; and

(4) calcining of the dried co-precipitates.

This process is termed a "co-precipitation process" and is highly complicated. See the description thereof in the prior art discussion at page 2, lines 2-13 of the specification. Additionally, the catalyst-activity constituent on the inner part of the carrier body of Okada does not come in contact with hydrocarbons and cannot contribute to reforming reactions.

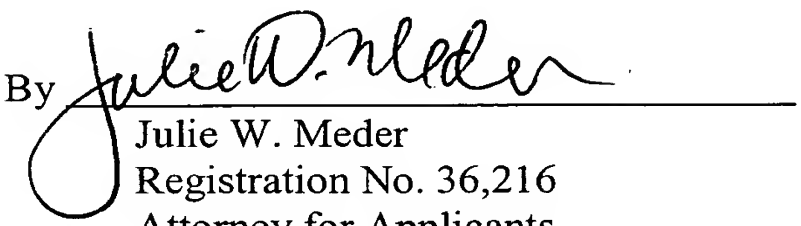
The Examiner states that "Okado discloses a reforming catalyst comprising a mixed oxide containing Mg and Ca oxide and transition metal (which includes Ni) and Co which are highly dispersed in the mixed oxide". However, claim 1 is not directed just to a mixed oxide. Missing from Okada is the porous carrier body of the present invention. The porous carrier of the present invention is important to achieving the improved results reported in the present application. Nowhere does the Okada patent teach a porous carrier body on

which is formed a complex oxide as required by claims 1 and 2. In view of the foregoing, it should be appreciated that claims 1 and 2 define over the Okada patent.

Reconsideration of the rejections and allowance of claims 1 and 2 are respectfully requested.

Respectfully submitted,

THE WEBB LAW FIRM

By 

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